

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

Modernizing the E-rate Program for
Schools and Libraries

WC Docket No. 13-184
FCC 13-100

**REPLY COMMENTS OF THE
MASSACHUSETTS BROADBAND INSTITUTE**
A Division of the Massachusetts Technology Collaborative

Massachusetts Broadband Institute
Connecting the Commonwealth

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The Massachusetts Broadband Institute (“MBI”),¹ a division of the Massachusetts Technology Collaborative (“Mass Tech Collaborative”),² respectfully submits these reply comments in response to the Notice of Proposed Rulemaking (“NPRM”) released by the Federal Communications Commission (“FCC”) on July 23, 2013, and to comments submitted on September 16, 2013.³ In particular, MBI endorses and builds upon the comments submitted by the Massachusetts Department of Telecommunications and Cable (“MDTC”).

¹ MBI is the state broadband entity created by Governor Deval Patrick and the Massachusetts state legislature in 2008 to bring affordable, high-speed broadband Internet access to the unserved/underserved residents, businesses, and community anchor institutions in the Commonwealth of Massachusetts (“Commonwealth”). Guided by its mission to extend affordable, robust, high-speed Internet access to all homes, businesses, schools, libraries, medical facilities, government offices and other public places across the state, with a focus on the hard-to-serve areas of western and central Massachusetts, the MBI implements and oversees broadband availability mapping, broadband adoption, and network infrastructure deployment programs within the Commonwealth. Additional information about MBI and its programs and activities is available at <http://broadband.masstech.org/> (last viewed Sept. 24, 2013).

² The Mass Tech Collaborative is an independent public instrumentality of the Commonwealth chartered to serve as a catalyst for growing its innovation economy. The Mass Tech Collaborative brings together leaders from industry, academia, and government to advance technology-based solutions that lead to economic growth, job creation, and public benefits in Massachusetts. The Mass Tech Collaborative energizes emerging markets in the high-tech sector by filling gaps in the marketplace, connecting key stakeholders, expanding broadband services, conducting critical economic analysis, and providing access to intellectual and financial capital. Additional information about the Mass Tech Collaborative and its programs and initiatives is available at www.masstech.org (last viewed Sept. 24, 2013).

³ *In the Matter of Modernizing the E-rate Program for Schools and Libraries*, WC Docket No. 13-184, Notice of Proposed Rulemaking, FCC 13-100 (rel. Jul. 23, 2013) (“NPRM”).

Through the NPRM, the FCC seeks comment on ways to comprehensively modernize and update the E-rate program.⁴ In particular, the FCC inquires about ways “to close the gap between the broadband needs of schools and libraries and their ability to purchase those services.”⁵ The FCC’s proposals include three, primary goals to guide its reforms: (1) ensure that schools and libraries have affordable access to 21st century broadband that supports digital learning; (2) maximize the cost-effectiveness of E-rate funds; and (3) streamline the administration of the program.⁶ MBI directs its comments on ways to expand affordable access to schools and libraries currently unserved and underserved by broadband, coupled with ways to promote cost-effective purchasing.

I. BACKGROUND AND SUMMARY

MBI commends the FCC’s reform efforts and knows first-hand the difficulties and economic and educational benefits⁷ associated with ensuring access to broadband infrastructure. Through its experience as the entity tasked by the Commonwealth to bring affordable, high-speed broadband access to hard-to-serve areas of the state, MBI recognizes that facilitating public-private partnerships is an effective approach to foster the expansion of broadband access in unserved and underserved areas. In addition, MBI strives to foster competition amongst multiple last-mile providers on its open-access *MassBroadband 123* network, with the central

⁴ *Id.* at ¶¶ 1, 11.

⁵ *Id.* at ¶ 13.

⁶ *Id.* at ¶¶ 12-55.

⁷ *See generally*, Informational Brochure, Developed by WesternMA Connect and western Massachusetts Regional Planning Agencies, *Innovative Uses of Broadband in Your Community - A guide to the many uses of broadband in Western Massachusetts’ communities* (Nov. 2012) (discussing ways in which broadband can “foster economic growth, improve health care, education, and municipal government, and strengthen public safety”), available at: http://broadband.masstech.org/sites/mbi/files/documents/building-the-network/Innovative_Uses_Broadband_WMass_p_RPAs.pdf (last viewed Oct. 17, 2013).

understanding that competition not only spurs investment and economic growth, it also drives down prices, thereby making services more affordable.

In close coordination with our network service provider, Axia NGNetworks USA (“Axia”),⁸ MBI has nearly completed deployment of its **MassBroadband 123** network.⁹ Funded with approximately \$26 million in state funding and a \$45 million grant award from the federal Broadband Technology Opportunities Program (“BTOP”) administered by the National Telecommunications and Information Administration (“NTIA”), **MassBroadband123** is a fiber-optic network that will span more than 1,000 miles across western and central Massachusetts. Upon completion, **MassBroadband 123** will be a publicly owned, carrier-neutral, open-access, middle-mile network that will enable connection of over 120 communities and over 1,200 community anchor institutions within the project footprint. Further, **MassBroadband 123**, through Axia, will offer wholesale connectivity supporting and enabling last-mile providers to offer broadband access to over 333,500 households and 44,000 businesses.

The E-rate program, largely beneficial to schools and libraries across the Commonwealth and nationwide,¹⁰ can go further to better serve these community anchor institutions.¹¹ Through

⁸ MBI contracted with Axia through an open, competitive bidding process. See MBI Webpage, “Axia Networks,” available at: <http://broadband.masstech.org/massbroadband-1-2-3/axia-networks> (last viewed Sept. 25, 2013).

⁹ Additional information about **MassBroadband 123** is available at <http://www.axiamassbroadband123.com/> (last viewed Sept. 25, 2013).

¹⁰ See NPRM at ¶ 2 (discussing the connectivity to schools and libraries facilitated by E-rate since the program’s inception); USAC E-rate Disbursement Tool, available at: <http://www.usac.org/sl/tools/commitments-search/Default.aspx> (last viewed Sept. 25, 2013).

¹¹ See, e.g., Massachusetts School Districts and Massachusetts Department of Elementary and Secondary Education Ex Parte, WC Docket 13-184 (filed Sept. 19, 2013) (“Massachusetts School Districts Ex Parte”) at 1-4 (for instance, urging support for “flexible connection designs” to ensure reliable connections in the event of an outage; observing that many school districts may pay for high-capacity connections that they do not need; recommending support for fiber between buildings on school campuses as a means to lower recurring Wide Area Network costs; and cautioning against phasing out support for phone service, “which is still a large expense in many districts”); Leading Education by Advancing Digital (“LEAD”) Comments at 3 (commenting that E-rate faces the “issue of capacity, not access”) and 6-7 (pointing out that current infrastructure “is inadequate” and fails to provide “sufficient” high-speed Internet Access in the classroom).

creative solutions arrived at by collaboration with such public entities as NTIA, as well as with state officials, educators, and industry, the FCC can refocus E-rate funding towards modern communications technologies that benefit a greater swath of schools and libraries, and their students and communities, across the country.¹² First, the FCC should adopt a whole-network approach to E-rate funding or, at a minimum, reevaluate existing Priority One services in order to better reflect market realities. In addition, the FCC should consider ways in which E-rate applicants can utilize and build laterals off of BTOP-funded middle-mile infrastructure, such as *MassBroadband 123*, to better serve schools and libraries still unserved and underserved by broadband today.

II. THE FCC SHOULD ADOPT A WHOLE-NETWORK APPROACH OR, AT A MINIMUM, EXPAND THE LIST OF PRIORITY ONE SERVICES.

MBI concurs that the FCC should eliminate the “priority” funding distinctions and, instead, adopt a “whole-network” approach.¹³ Not only would such an approach ease applicants’ administrative burden, it “better reflects and adapts to market realities as they relate to services provisioned to consumers[.]”¹⁴ A whole-network approach encourages greater efficiency and more cost-effective purchasing, as the current system appears to cultivate more expensive, shorter-term technology solutions for those that seek funding.¹⁵ For instance, *MassBroadband*

¹² Like the MDTC, MBI believes that E-Rate reform should incorporate a measured transition to minimize potential flash-cuts and impacts on schools and libraries and provide applicants time to acquaint themselves with any changes. See MDTC Comments at 9. MBI also urges the FCC to ensure that any new funding requirements do not conflict with other federal or state educational directives. *Id.* at 10.

¹³ See NPRM at ¶¶ 146-148 (seeking comment on the “priority” funding system); MDTC Comments at 5-6; Funds for Learning Comments at 3, 5-6.

¹⁴ MDTC Comments 6.

¹⁵ See Funds for Learning Comments at 6.

123 permits connecting providers to offer a full suite of services to retail consumers.¹⁶ In other words, unlike the unintended effects arising from existing E-rate rules and limited funding, MBI does not limit the service options available in order for carriers to provision service to consumers. As several commenters advocate, the FCC should facilitate a flexible approach to funding that permits applicants to choose the communications services that best fit their needs.¹⁷ A whole-network approach would provide this flexibility.¹⁸

If the FCC does not adopt a whole-network approach, then it should expand the list of Priority One services to permit a more flexible approach to funding.¹⁹ This would allow schools and libraries to better tailor their requests to reflect their actual needs. In that vein, Priority One services should include support of scalable, flexible and affordable fiber-based solutions, whether dark or lit.²⁰ Commenters such as the City of Boston endorse treating dark and lit fiber in a consistent manner,²¹ and such a measure would be a logical part of the FCC’s proposed reforms. Many regional networks, including **MassBroadband 123**, by default, are built from a combination of both types of fiber. While demand for E-rate funding will likely continue to exceed available funds, this reformulation of “priority” services coupled with other reforms should reduce overall program costs and benefit a greater number of applicants.

¹⁶ See **MassBroadband 123** page, “Services you can offer to your customers,” available at: <http://www.axiamassbroadband123.com/ServiceProviders/BecomeaServiceProvider/ServicesYouCanOffer.aspx> (last viewed Sept. 26, 2013).

¹⁷ See Funds For Learning Comments at 53-55; NTCA—The Rural Broadband Association and the Western Telecommunications Alliance (“NTCA/WTa”) Comments at 24; Verizon Comments at 10.

¹⁸ See City of Boston Comments at 5-6.

¹⁹ See Funds for Learning Comments at 29.

²⁰ See NPRM at ¶¶ 71-72. See also Windstream Comments at 2-5 (urging the FCC to reform E-rate to facilitate the deployment of fiber and comprehensive network systems).

²¹ See City of Boston Comments at 4.

III. THE FCC SHOULD ENCOURAGE UTILIZATION OF BTOP-FUNDED INFRASTRUCTURE.

E-rate funding, if coordinated with other federal programs,²² would provide an invaluable opportunity to individual schools and libraries that remain unserved and underserved by broadband. The BTOP program, for instance, helped to fund open-access network infrastructure projects such as *MassBroadband 123*. Although primarily a middle-mile project, *MassBroadband 123* will directly connect over 150 K-12 schools in western Massachusetts that were not otherwise served. However, MBI estimates that almost 270 additional schools spread over multiple school districts within the *MassBroadband 123* footprint will remain unconnected. Although working to facilitate public-private partnerships to connect to our network, MBI does not have sufficient funding to connect these remaining schools. After meeting with all the towns and school districts in the project footprint, most indicate that they are unable to afford the build-out on their own. Further, limited Connect America Fund (“CAF”) support flows into Massachusetts, and Verizon, the statewide incumbent local exchange carrier, has rejected CAF Phase I incremental support for the past two years. If the FCC was able to better coordinate E-rate funding with BTOP-funded projects in areas with limited-to-no CAF funding, like *MassBroadband 123*, then those schools and libraries that otherwise remain unserved would have the capability to more easily transition to and afford 21st century communications technologies.²³

²² See, e.g., MDTC Comments at 7-9 (arguing that such coordination would “further assist with efficiencies and implementation of cost-saving measures”); NTCA/MTA Comments at 11 (pointing out that “failure to leverage existing assets that have been deployed in connection with and/or are currently supported through federal programs such as BTOP, BIP, other RUS financing programs, and High-Cost universal service support” could lead to a number of negative consequences).

²³ Individual schools and libraries remain unserved although they may be located in areas deemed “served” for purposes of CAF support.

For instance, *MassBroadband 123*, a fiber-based, fully meshed, and ringed network, offers community anchor institutions and service providers incredible flexibility and scalability without the requirement to invest in a fixed pathway between two points. Each community anchor institution contains a switch that can accommodate between 1 and 10 GB and up to twelve or twenty-four ports for service provider connections. Community anchor institutions may consolidate their services with one provider or may interconnect with multiple providers in the same switch. In addition, community anchor institutions that purchase service into the core of the network can interconnect with any other anchor(s) in private groupings at very little incremental cost.

Schools and libraries that will not be initially connected to *MassBroadband 123* can still pursue a connection to *MassBroadband 123* in numerous ways, such as: building and owning a fiber lateral (on their own or through a consortium); collaborating with public and/or private partner(s) to build a lateral whereby a portion of the fiber is reserved for the school; and leasing lit services from a lateral that a provider builds and owns and uses to serve other entities as well. This permits schools and libraries to be able to pursue long-term, scalable, cost-effective solutions that work for them. Collaborative efforts to build laterals that serve schools and libraries, as well as, potentially, last-mile residents and businesses, could reduce overall costs for the schools and libraries to connect to the Internet via fiber—especially if the up-front costs to build the lateral can be amortized over a number of years.

In order to ensure the greatest efficiencies and benefits of coordinating E-rate with BTOP (or other) projects, the FCC should consider several factors.²⁴ First, the FCC should annually reserve a percentage of E-rate funding for infrastructure build-out and special construction

²⁴ MBI encourages the FCC to contemplate these factors, generally, even if it chooses to not coordinate E-rate with BTOP-funded projects.

costs.²⁵ In the alternative, the FCC should adopt a pilot program tied to last-mile infrastructure projects connecting to BTOP-funded networks like *MassBroadband 123*.²⁶ Most of the unconnected schools in the *MassBroadband 123* project footprint are neighborhood schools surrounded by unserved households and businesses. The pilot should be designed with the intent of better understanding how fiber laterals to neighborhood schools and libraries could be used to serve local residents and businesses. The pilot could also offset some of the one-time and recurring costs to the schools and libraries connected through the pilot. Second, the FCC should seek input from relevant state entities on prioritization of such infrastructure build-out, similar to the input received by NTIA for BTOP project applications. States can be instrumental in aggregating demand for schools that are unconnected—especially when the remaining schools are not part of the same school district. Third, the FCC should consider ways to incentivize public-private partnerships, multi-party applications, and bulk buying opportunities.²⁷ Finally, the FCC should alleviate the burdens and funding uncertainty involved with applicants’ use of multi-year contracts.²⁸

IV. CONCLUSION

MBI applauds the FCC’s efforts on E-rate reform and agrees that the program requires a refocus on more modern communications technologies. MBI endorses and builds upon comments submitted by the MDTC, by directing its comments on ways to expand affordable access to schools and libraries currently unserved and underserved by broadband, coupled with ways to promote cost-effective purchasing. In particular, MBI urges the FCC to adopt a whole-

²⁵ See NPRM at ¶ 75 (seeking comment on whether to dedicate a level of funding for special construction charges from middle-mile networks); MDTC Comments at 8.

²⁶ NPRM at ¶¶ 220-223 (seeking comment on a possible pilot program).

²⁷ *Id.* at ¶¶ 164-166 (seeking comment on incentivizing public-private partnerships) and ¶ 178 (seeking comments on ways to encourage more bulk buying and consortium purchasing).

²⁸ *Id.* at ¶¶ 216, 239-246 (seeking comment on issues involving multi-year contracts).

network approach or, in the alternative, expand the suite of services eligible for Priority One support, in order to better reflect market realities. In addition, MBI urges the FCC to better coordinate E-rate funding with other federal programs, including support to connect to BTOP-funded projects like *MassBroadband 123*, and to consider several factors tied to this coordination.

Respectfully submitted,

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